The Smoke You Don't See: Uncovering Tobacco Industry Scientific Strategies Aimed Against Environmental Tobacco Smoke Policies

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Objectives. This review details the tobacco industry's scientific campaign aimed against policies addressing environmental tobacco smoke (ETS) and efforts to undermine US regulatory agencies from approximately 1988 to 1993.

Methods. The public availability of more than 40 million internal, once-secret tobacco company documents allowed an unedited and historical look at tobacco industry strategies.

Results. The analysis showed that the tobacco industry went to great lengths to battle the ETS issue worldwide by camouflaging its involvement and creating an impression of legitimate, unbiased scientific research.

Conclusions. There is a need for further international monitoring of industry-produced science and for significant improvements in tobacco document accessibility. (*Am J Public Health.* 2001;91:1419–1423)

Concerns regarding the health effects of environmental tobacco smoke (ETS) began as early as 1973 when the US Civil Aeronautics Board required nonsmoking areas on all commercial airplanes. Arizona and Minnesota became the first US states to restrict indoor smoking to designated areas with the enactment of clean indoor air acts in 1973 and 1975, respectively. The US surgeon general's 1979 report concluded that ETS exposure should be considered a separate scientific issue from active smoking.[1]

Investigation of ETS as a source of indoor air pollution and a potential carcinogen increased throughout the 1980s.[2–5] An early 1990s investigation of the association between heart disease and ETS showed that approximately 37 000 annual heart disease deaths among nonsmokers occur in the United States owing to ETS exposure,[6] a finding supported by subsequent research.[7] In January 1990, 2 years after airliner cabin air quality was addressed, the US Environmental Protection Agency (EPA) released a draft risk assessment reporting that 3800 lung cancer deaths per year were attributable to ETS.[8]

The final EPA report, *Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders*, was released on January 13, 1993, and attributed 3700 annual US lung cancer deaths to ETS exposure.[8] (The EPA report was completed in December 1992; therefore, it is commonly referred to as the "1992 EPA report.") Five months after the release of the report, representatives of the tobacco industry filed suit against the EPA in an attempt to force withdrawal of the conclusion that ETS was a group A carcinogen. In 1998, after a 5-year court battle, Judge William L. Osteen voided EPA's classification of ETS as a group A carcinogen. The judge did not, however, vacate other EPA findings regarding ETS and various respiratory disorders.[9]

METHODS

Approximately 618 boxes of industry documents were reviewed by one of the authors (Monique E. Muggli) from May 1998 to February 1999. The Minnesota Tobacco Document Depository estimated that each of the boxes included 2500 pages. The number of document pages reviewed from the other sources described subsequently (the British American Tobacco Document Depository and the tobacco industry's Web site, the Tobacco Archives) was estimated to be fewer than 2000.

Minnesota Tobacco Document Depository

On May 8, 1998, the tobacco companies announced a settlement exceeding $6 billion with the State of Minnesota and BlueCross BlueShield of Minnesota. The Minnesota settlement required the US tobacco companies to maintain a public document depository in Minneapolis to house more than 32 million pages of internal documents. The 4(b) index is a database that categorizes documents by specific fields such as author, recipient, copyee, document date, title keyword(s), plaintiff request number, and document type. The 4(b) index used at the Minnesota depository was created by the US defendants named in *State of Minnesota et al. v Philip Morris et al.* to catalog the documents.

British American Tobacco Document Depository

The Minnesota settlement also required the British American Tobacco Co to provide public access to its approximately 8 million internal documents in a depository located near Guildford, England. A limited search of documents related to ETS was performed at the British American Tobacco document depository. The depository index was searched via the fields *file user* and *file owner*. Files owned or used by key British American Tobacco scientists and public relations personnel were reviewed.

Tobacco Archives

The Tobacco Archives Web site was created in 1998 by Philip Morris, RJ Reynolds, Lorillard, Brown and Williamson, the US Tobacco Institute, and the Council for Tobacco Research, Inc. The index used at the Web site is referred to as the National Association of Attorneys General Index. This index is operationally similar to the 4(b) index but contains 2 additional fields: *named organization* and *named person*.

Search Strategy

The search for documents at the depository involved the following: (1) searching the 4(b) index, (2) requesting the box(es) that contained the found document(s), and (3) reviewing the contents of the box(es) in a public

viewing area. Several measures were implemented to ensure as thorough a search as possible. The selected topic (i.e., ETS) and related terms (e.g., EPA) were searched as *title keywords*. With broad keywords such as ETS or EPA, a time frame limit (e.g., 1988–1993) was placed on the search to reduce the number of documents produced. Results of the document searches were reviewed. The title keyword search allowed identification of key scientists, public relations staff, attorneys, and consultants and assisted in the development of a chronology of events from 1988 to 1993 relating to the ETS issue.

Once key persons, dates, and keywords were identified, the 4(b) index was searched by *author*, *recipient*, *copyee,* and *date*. Finally, a combined search using the 4(b) index and the National Association of Attorneys General Index allowed us to review boxes not found in the former because of differences in, for example, the fields used in the 2 indexes.

RESULTS

The ETS Threat

The tobacco industry's expansive campaign to produce scientific research and influence public opinion on the health consequences associated with ETS was developed to protect the financial and political interests of the companies. The documents reveal that the industry feared the ETS issue and any governmental regulation of smoking in public places, because both would have a profound effect on industry profits owing to (1) decreases in consumption, (2) increases in litigation, and (3) weakened support from business owners and politicians.

Philip Morris's longtime public relations firm, Burson Marsteller, warned in one document that consumers would be "deprived of more and more locations in which they can smoke, and psychologically given more incentive to quit."[10] In addition, the vice chairman of the board of Philip Morris, Inc, identified the ETS issue as the "single most important challenge we currently face" and went on to state:

> ETS is the driving force behind smoking restrictions in the workplace, on airlines and other forms of public transportation, and in virtually all areas offering public access. If present trends continue, smokers will have fewer and fewer opportunities to enjoy a cigarette. This will have a very direct and major impact on consumption.[11]

Industry-retained attorneys feared that fallout from the ETS issue would result in an increase in product liability, workers' compensation, and other ETS exposure litigation surrounding secondhand smoke.[12] The EPA's 1993 ETS risk assessment was a focus for this fear, because an increase in smoking bans could be initiated if ETS were classified as a carcinogen.

Finally, the ETS issue and the EPA report could instigate a potential loss of political support from merchandisers, business owners, and politicians. In a 1992 speech to the Philip Morris Board of Directors, Craig L. Fuller, the senior vice president of corporate affairs of Philip Morris and former chief of staff to Vice President George Bush, noted that the risk assessment would be challenging as a result of the inevitable negative political effect the report would have on business communities.

> [I]f . . . the Administrator of the EPA . . . issues the Risk Assessment which asserts that secondary tobacco smoke [ETS] is carcinogenic, we have a very difficult problem. Our allies who have held the line in buildings, restaurants, shopping areas, sports complexes and other areas will almost certainly be forced to rethink their position.[13]

Not only would businesses, restaurants, and bars be forced to choose between smoking bans and the installation of costly ventilation systems, business owners would be forced into the political arena. As long as the industry could deny any health risk associated with ETS, it could continue to count on its traditional political support. However, if the EPA were to proclaim that ETS caused cancer, employers and politicians alike would be less likely to openly show support for the tobacco industry. For the first time, the industry and its supporters could no longer simply respond to tobacco's health effects on smokers who were "making a personal choice" to smoke. The ETS issue would effectively remove the umbrella of personal choice under which the industry had hidden for decades.

Philip Morris's fear of the ETS issue was justified. In 1993, an industry-funded group estimated that 3 to 5 fewer cigarettes smoked per day as a result of smoking restrictions would reduce annual manufacturer profits by more than $1 billion per year.[14] Consequently, during the year between the release of the first and second drafts of EPA's risk assessment, Philip Morris spent more than $16.5 million on their "scientific campaign" against the ETS issue.[15] The industry's concern over this issue is also evidenced by the 1996 Philip Morris media affairs ETS–EPA budget, which was almost twice that for youth access initiatives and US Food and Drug Administration regulatory issues.[16]

Industry Science: The ETS Disinformation Campaign

During the 1980s, the industry's primary argument against health consequences associated with ETS was simple: there were other agents responsible for poor indoor air quality.[11] As the next decade approached, the industry knew that ETS and related health issues would persist. They quickly began to recognize that more effective strategies to counter ETS arguments were needed. The Philip Morris vice chairman of the board told industry attorneys in 1989 that the old industry messages regarding ETS were failing and that they "must find stronger arguments to support our position on ETS."[11]

The Center for Indoor Air Research (CIAR), a nonprofit organization funded by the tobacco industry, played an essential role in developing "stronger arguments" to support the industry's position that ETS represented an insignificant health risk.[11] CIAR was founded in March 1988, allegedly for the purpose of "sponsoring high quality research on indoor air issues and to facilitate the communication of research findings to the broad scientific community."[17] Founding members of CIAR included Philip Morris, R. J. Reynolds, and Lorillard.[17] From 1989 to 1999, CIAR funded at least 244 published studies,[18] some of which, documents suggest, were central to the industry's efforts aimed against the EPA and the US Occupational Safety and Health Administration (OSHA). In 1995, Philip Morris and R.J. Reynolds paid CIAR annual dues of $5.3 million and $1 million, respectively.[19]

Since its inception in 1988, CIAR had acted as a buffer between the tobacco indus-

try and scientists. An attorney from the Washington, DC–based law firm Covington and Burling (counsel to the Tobacco Institute and Philip Morris) made the following statement in regard to CIAR:

> [W]e all know that many scientists will not accept funding directly from the industry but will accept funding from entities like CIAR. We need to have access to the best qualified researchers at the most prominent institutions worldwide when deciding who should conduct research for which funds have been made available. CIAR should provide us with that access, now and into the future.[20]

This buffer allowed industry-funded scientists to produce seemingly independent results aimed at contradicting ETS findings and disclaiming the EPA report while keeping such research under industry control. Covington and Burling attorney John Rupp reported to another tobacco company that the industry indeed had ultimate control over CIAR-funded projects:

> The responsibility for "ensur[ing] effective use" of the findings of funded research remains, in the final analysis, the responsibility of those who have funded the research. With published reports of funded research in hand, the industry has to decide how and when to make use of the findings—whether through mailings of one sort or another, filings in regulatory proceedings, inclusion of the funded research in review articles or presentations by consultants…or in other statements that may be made on the industry's behalf. We have found in the past that CIAR grantees often are prepared to assist with such efforts. As noted, however, the responsibility for ensuring the effective use of the findings of funded research is a responsibility that remains ultimately with the industry.[20]

CIAR studies designed to rebut regulatory agency activities. OSHA was also considered a threat to the industry's ETS efforts because if the EPA ruled that secondhand smoke was a group A carcinogen, OSHA would then have the authority to regulate workplace smoking. Documents disclose that there were 2 projects in particular that were developed to provide industry support against the threat of the EPA and OSHA initiating further smoking restrictions: the "US Exposure Study" and the "US Confounders Study."[21] According to a Philip Morris document titled *CIAR Applied Project*, CIAR paid $1.2 million for the exposure study, carried out by Drs Michael Guerin and Roger Jenkins at the Oak Ridge National Laboratory, and $1.3 million for the confounders study, conducted by Dr Genevieve Matanoski at Johns Hopkins University.[22]

In addition to the Matanoski study, the industry was also interested in producing research that considered other confounding factors, such as genetic predisposition,[23] diet,[24] and stress,[25] that would lessen the important role that ETS played in lung cancer etiology. In fact, over an 8-year period, Philip Morris provided more than $7 million to the Friedman Institute for various studies on topics such as unsuccessful stress management as a causal factor in cancer.[25]

> The Friedman project could play a key role in getting the cancer monkey off the cigarette industry's back, by showing that unsuccessful stress management could account for the large amount of cancer mortality currently attributed to cigarette smoking.[25]

Exposure studies were also planned in Germany, Sweden, Spain, France, and Italy, as were confounder studies in Germany, Sweden, the United Kingdom, and Hong Kong.[26] Japan was a proposed site as well, and a handwritten Philip Morris document suggests that the studies were to be conducted by "'fresh faces'; not the same old industry consultants."[27] It is difficult to evaluate from the documents the total amount spent on the exposure studies; however, one document recorded that CIAR budgeted approximately $2.4 million for exposure studies conducted outside the United States in 1994.[19]

After almost 10 years of funding research that "remain[ed] ultimately with the industry," CIAR is no longer in operation. The recent master settlement agreement between the US tobacco companies and the US state attorneys general, announced on November 16, 1998, required CIAR to disband.[28]

Use of scientific consultants. Similar to CIAR, an industrywide ETS consultant program was also fully functioning in the United States by 1988; however, its operation and funding were apparently somewhat different from those of CIAR. Funded by the American, Japanese, and European tobacco companies,[29] ETS consultant programs were created in the Latin American, Australian, Middle Eastern, Asian, US, Nordic, and European markets. Although some scientists would conduct research similar to that funded by CIAR, their role would focus more on public endorsement of such research[30] in an effort to "keep the [ETS] controversy alive."[31]

ETS consultants embarked on various activities under the industry's direction, including (1) attending and presenting papers at selected ETS symposia and conferences[32–34]; (2) writing op-ed pieces in top-tier newspapers and magazines such as *The New York Times*, *The Washington Times*, and *Newsweek*[33,35,36]; (3) submitting comments to the EPA and the CIAR Scientific Advisory Board on the draft 1990 EPA report[33]; and (4) engaging in media tours (labeled "Truth Squad" tours) designed, seemingly, to discredit the EPA and its ETS risk assessment.[32,33,37–39]

Industry scientific consultants were also used to infiltrate international public health conferences addressing ETS, including the 6th and 8th World Conferences on Tobacco or Health.[40,41] Documents show that Japan Tobacco, Inc, sought to "change the very nature and tone" of the 1987 world conference by having approximately 40 scientists attend and present "neutral" papers:

> Since 300 scientists are expected to attend, 40/300 of the papers presented would represent a [neutral] position [on] smoking [and] health, thereby exerting influence on the general tone of the conference.[40]

Although the use of scientists to spread industry messages was widespread, documents suggest that some industry leaders did recognize that the industry was jeopardizing its credibility by paying the ETS consultants. A Philip Morris document titled *Environmental Tobacco Smoke: S. Parrish* [Steve Parrish] *Dictation* reported the following:

> [W]e should push the notion that these people are of such stature that they cannot be corrupted by receiving a few thousand dollars from the tobacco industry. . . . Also, we should attempt to get some high-powered spokespersons or reputable scientists to do the job for nothing—this may not be impossible.[42]

DISCUSSION

This review of internal tobacco company documents has expanded the existing knowledge of industry tactics against EPA policies

and the industry's use of both science and scientific consultants. It has also provided support for previously suspected strategies and outlined previously undisclosed industry approaches aimed at the public health community.

The documents reviewed show that the tobacco industry went to great lengths to battle the ETS issue by camouflaging its involvement and creating an impression of legitimate, unbiased scientific research. The industry put forth considerable effort to discredit ETS science and US regulatory agencies such as the EPA and OSHA by creating organizations and programs such as CIAR and the ETS consultant program.

The facade of the public pronouncements of the tobacco industry has been partially exposed in earlier reports.[43–47] For example, Barnes and Bero found that of 106 published ETS articles reviewed, 37% concluded that ETS was not harmful to one's health, and almost 75% of these articles were authored by scientists known to be associated with the tobacco industry.[48] A similar trend was found on examination of written submissions received by the EPA after the release of the June 20, 1990, draft risk assessment. Sixty-four percent of the written submissions asserted that the conclusion of the draft was groundless, and 71% of these submissions were authored by individuals known to be associated with the tobacco industry.[49] This report expands the earlier findings with support from additional internal documents.

Critical to understanding tobacco industry scientific tactics is the realization of how CIAR and scientific consultants operated. For example, in the United States, documents show that the consulting scientists were paid to disseminate industry messages against the EPA and OSHA via symposia, scientific publications, and submissions to EPA and the media. In Europe, however, scientists were used in an attempt to infiltrate the World Health Organizations' cancer research arm, the International Agency for Research on Cancer, which had published a study corroborating the EPA's finding that ETS is a carcinogen.[50,51] It appears that the industry tailored its use of scientists to fit the markets in which the companies operated.

While the media and US public policy initiatives have refuted any industry claims of CIAR's being an independent nonprofit organization, internal industry strategies operating under CIAR have not been widely reported.[52,53] Documents reveal that CIAR was used in an attempt to publicly demonstrate to US regulatory agencies that the industry was making a concerted effort to study ETS and its health effects, yet CIAR studies were actually developed to discredit EPA and OSHA agendas. It is equally important to note that internal documents certify that research funded by CIAR was ultimately under the control of the industry and mostly controlled by industry-retained attorneys.

This review shows that the industry strategy is to take the long and wide view. Even as the industry loses a battle, it buys time—a Philip Morris strategy referred to as "sand in the gears."[13] For each year of delay, an estimated 4 million people die around the globe from tobacco-related diseases.[54] It is apparent from this review and recent events that the ETS battle is far from over. Once again, the tobacco industry has bought more time.

If global public health gains against the ETS issue are to be realized, efforts to promote financial disclosure of scientific presentations in the literature, in symposia, and in the media must be strengthened in developing nations such as those of South and Central America and the Asian Pacific region. It is probable that consulting tobacco industry scientists will flood the scientific literature in those countries as they did in the United States. The consultants may be more difficult to identify as affiliated with the tobacco industry, however, because "fresh faces" are being sought.

Initiatives to improve document accessibility and searching capability are important to ensure that all documents housed at the Minnesota Tobacco Document Depository and at the British American Tobacco document depository in Guildford, England, are available worldwide on the Internet. Disclosure of internal tobacco documents has opened opportunities never before imagined. Obtaining access to these documents, however, can be an arduous process owing to indexing inefficiencies, lack of document standardization, and unreasonable limits to public access to documents not yet on the Internet.

Although the internal, once-secret tobacco industry documents provide an invaluable source of information, there are inherent limitations to their acquisition and use, including the following:

1. Full-text searching is not available; therefore, researchers must rely on certain fields only. Searching by these fields only can generate erroneous information and does not capture all of the documents produced related to ETS.
2. In our case, only about 1.5 million pages of more than 40 million available documents housed at the Minnesota and Guildford depositories were reviewed. This represents only 3.75% of the estimated document population. In the interest of conciseness, only a fraction of the searched pages have been cited here.
3. There are large gaps in knowledge of the industry's activities with respect to the ETS issue because of privileged documents that were unavailable at the time of document acquisition.
4. Time and financial resources represent a limitation in that the documents are spread across the globe in different depositories and across multiple Web sites.
5. The physical state of the documents can be problematic owing to missing attachments or illegibility caused by multiple photocopying.
6. Access to the British American Tobacco depository in Guildford remains extremely limited.
7. In our case, it was not possible to interview the persons who authored, received, or were named within the documents cited in this article. ■

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This article was accepted March 7, 2001.

Contributors

M.E. Muggli conducted all document research and drafted the manuscript. J.L. Forster acted as an advisor for the master's thesis from which this paper was developed, and she contributed to the writing of the paper. R.D. Hurt assisted in reviewing critical documents and contributed to the writing of the paper. J.L. Repace provided background information and contributed to the writing of the paper.

Acknowledgment

We would like to thank Dr Anne Joseph and the BlueCross BlueShield Foundation of Minnesota for initiating and funding this project.

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